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United States Patent [19]**Matsuo et al.**[11] **Patent Number:** **5,731,116**[45] **Date of Patent:** **Mar. 24, 1998**

[54] **ELECTROSTATIC INFORMATION
RECORDING MEDIUM AND
ELECTROSTATIC INFORMATION
RECORDING AND REPRODUCING
METHOD**

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[30] Foreign Application Priority Data

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[52] U.S. Cl. **430/56; 430/48; 430/60;
430/66**

[58] Field of Search 430/56, 45, 46,
430/48, 60, 66; 355/77, 217, 218

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[57] ABSTRACT

The present invention relates to an electrostatic information recording medium in which a charge retaining layer having high insulating properties is laminated on an electrode, and an electrostatic information recording/reproducing process wherein, while said electrostatic information recording medium is positioned in opposition to a photosensitive member on which a photoconductive layer is laminated, the recording medium is subjected to information exposure with the application of voltage between both electrodes to accumulate electrostatic charges thereon depending upon the dosage of said information exposure, and the electrostatic information thus accumulated is reproduced by potential reading.

The present electrostatic information recording medium has an information density as expressed in terms of a high recording capacity of the order of 8×10^8 bits/cm², and makes it possible to process information in a planar state so that analog or digital information such as characters, line pictures, images, (0-1) information and sounds can be accumulated in the form of electrostatic charges. With the present electrostatic information recording medium, it is possible to obtain information of high quality and resolving power because of the information being accumulatable in electrostatic charge units. Due to its high charge retainability, it is further possible to store information permanently. Still further, it is possible to make inexpensive and simple recording/reproducing systems, since information can be output by reading local potentials of electrostatic latent images at any time and any scanning density.

37 Claims, 42 Drawing Sheets

